

REMARKS

Claims 3, 5, 7, 11, 13, 15, 17, 22-28 and 30-34 are pending in this application. By this Amendment, claims 11 and 15 are amended, claims 31-34 are added, and claims 9 and 29 are canceled, without prejudice to, or disclaimer, of the subject matter recited therein. Applicants have amended claims 11 and 15 to include the features of claims 9 and 29. Support for claims 31-34 can be found in the specification, for example, at paragraph [0018]. No new matter is added.

The Office Action rejects claims 3, 5, 7, 9, 11, 13, 15, 17 and 22-33 under 35 U.S.C. §103(a) over U.S. Patent No. 5,296,189 to Kang et al. (hereinafter "Kang"). As discussed above, claims 9 and 29 are canceled, and thus the rejection of these claims is moot. However, the rejection of the remaining claims is respectfully traversed.

With respect to independent claims 11 and 15, Applicants respectfully submit Kang fails to teach or suggest metal particles that have an average particle size of 0.5 μm or less and an average particle size of said ceramic particles is a quarter of or less than the average particle size of said metal particles, as recited in independent claims 11 and 15. The Office Action acknowledges Kang fails to teach metal particles having an average particle size of 0.5 μm or less. However, the Office Action alleges it would have been obvious to one having ordinary skill in the art to use the claimed particle size. Applicants respectfully disagree with this assertion.

In particular, as discussed, for example, in the specification, Applicants' disclosure describes the direct benefit of having a particle size as claimed in independent claim 11. Specifically, the specification at paragraph [0024], describes that normally, metal particles with an average particle size of 0.5 μm or less are likely to aggregate. However, the benefit of having a step of wetting undried metal particles after washing in water in addition to the step of colliding two slurries in relatively different direction to obtain a dispersion, provides

the benefit of preventing the aggregation of the particles. Thus, it gives conductive composition wherein metal particles are highly dispersed (i.e., conductive composition with smoother surface), as suggested in Examples 1 and 3.

Additionally, Applicants respectfully submit that Kang fails to teach wetting undried metal particles having been water washed and colliding a first slurry including at least the wetted metal particles and the ceramic particles with a second slurry supplied along contrary different direction from the first slurry, as recited in independent claims 11 and 15. In particular, Kang merely describes treating metal particles in water after removing water from the particles by drying. That is, the step of treating metal particles in water as disclosed by Kang, cannot reasonably be considered to correspond to the features recited in independent claims 11 and 15.

Furthermore, Applicants respectfully submit that the features of independent claims 11 and 15 resolve a longstanding problem that excess action of medias (corresponding to ceramic particles) deforms metal particles (paragraph [0004]). Moreover, a specific ratio of average particle sizes of metal particles and ceramic particles allows controlling an action due to medias and preventing in deformation of metal particles (paragraph [0023]).

Furthermore, with respect to amended independent claims 11 and 15, Applicants respectfully submit the features of independent claims 11 and 15 provide a direct benefit of having a composition superior in dried sheet density regardless of the number of dispersion treatment and smoother in its surface, as described in Table 1 of the specification. That is, a difference in the ratio of particle sizes may greatly influence properties in an obtained composition, such as particle filling property (sheet density) and surface smoothness property, as illustrated in Table 1 of the specification.

For at least the above reasons, Applicants respectfully submit independent claims 11 and 15 are allowable. Additionally, claims 3, 5, 7, 11, 13, 15, 17, 22-28 and 30-34 are

allowable at least for the dependency on independent claims 11 and 15, as well as for the additional features they recite. Accordingly, Applicants respectfully request withdrawal of the rejection.

The Office Action rejects claims 3, 11, 15 and 26 under 35 U.S.C. §103(a) over U.S. Patent No. 5,852,076 to Serafin et al. (hereinafter "Serafin"). This rejection is respectfully traversed.

The Office Action rejects claims 5, 7, 9, 13, 23, 24 and 27-29 under 35 U.S.C. §103(a) as being unpatentable over Serafin in view of Kang. This rejection is respectfully traversed.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'James A. Oliff', with a long horizontal line extending to the right.

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